

What is claimed is:

1. A process for activating a basic metal oxide isomerization catalyst which comprises at least one step of contacting the basic metal oxide catalyst under activation
5 conditions with a dry inert gas containing not more than about 5 ppm molecular oxygen by volume.

2. The process of claim 1 wherein the inert gas contains no more than about 2 ppm of molecular oxygen.

10 3. The process of claim 1 wherein the inert gas contains no more than about 1 ppm of molecular oxygen.

15 4. The process of claim 1 wherein the inert gas is nitrogen.

20 5. The process of claim 1 wherein the activation conditions of the at least one step include a temperature of at least about 550°C and a period of time of at least about 6 hours.

25 6. The process of claim 1 wherein the basic metal oxide is selected from the group consisting of magnesium oxide, calcium oxide, barium oxide, lithium oxide and combinations thereof.

7. The process of claim 1 wherein the basic metal oxide is magnesium oxide.

8. The process claim 1 further including the step of decoking the catalyst prior to contacting the catalyst with dry inert gas, wherein decoking the catalyst comprises contacting the catalyst with an inert gas combined with at least about 2 percent by weight molecular oxygen at a temperature of at least about 460°C for at least about 6 hours.

9. The process of claim 8 wherein decoking the catalyst further comprises contacting the catalyst with an inert gas combined with at least about 20 percent molecular oxygen at a temperature of at least about 500°C for at least about 18 hrs.

10. A basic metal oxide catalyst for isomerization treated in accordance with the process of claim 1.

11. The basic metal oxide catalyst of claim 10 wherein the basic metal oxide is selected from the group consisting of magnesium oxide, calcium oxide, barium oxide, lithium oxide and combinations thereof.

12. The basic metal oxide catalyst of claim 11 wherein the basic metal oxide is magnesium oxide.

13. A process for isomerizing an olefinic feedstock comprising:

a) providing a basic metal oxide olefin isomerization catalyst;

5 b) activating the basic metal oxide olefin isomerization catalyst by contacting the basic metal oxide catalyst under activation conditions with at least one step of using a dry inert gas containing not more than about 5 ppm molecular oxygen by volume;

10 c) contacting the olefinic feedstock with the activated basic metal oxide catalyst under olefin isomerization conditions to provide an isomerized product.

15 14. The process of claim 13 wherein the basic metal oxide catalyst is selected from the group consisting of magnesium oxide, calcium oxide, barium oxide, lithium oxide and combinations thereof.

20 15. The process of claim 13 wherein the basic metal oxide catalyst is magnesium oxide.

16. The process of claim 13 wherein the inert gas contains no more than about 2 ppm of molecular oxygen.

25 17. The process of claim 13 wherein the inert gas contains no more than about 1 ppm of molecular oxygen.

18. The process of claim 13 wherein the inert gas is nitrogen.

19. The process of claim 13 wherein the process further
5 includes the step of

reducing the content of molecular oxygen in the olefinic feedstock prior to contacting the olefinic feedstock with the basic metal oxide catalyst.

10 20. The process of claim 19 wherein the step of reducing the content of molecular oxygen of the olefinic feedstock comprises contacting the olefinic feedstock with a reduced metal.

15 21. The process of claim 20 wherein the reduced metal is copper.